

Application No. 10/806,812
Response to Office Action

Customer No. 01933

Listing of Claims:

1. (Currently Amended) A light source device for generating extreme ~~ultra-violet~~ ultraviolet light by irradiating a target with a laser beam, said device comprising:

a target supply unit for supplying a material which becomes
5 said target;

a laser unit, including which includes an oscillation stage including a laser having for generating a laser beam in both a lower-order transverse mode and a single mode and at least one amplification stage ~~laser~~ for amplifying ~~a lower-order transverse~~
10 ~~mode~~ the laser beam generated by said oscillation stage laser, for irradiating said target with the amplified laser beam so as to generate plasma; and

a collection optical system for collecting ~~the extreme ultra~~ violet ultraviolet light emitted from said plasma to output the
15 collected extreme ~~ultra-violet~~ ultraviolet light.

2. (Currently Amended) The light source device according to claim 1, wherein said laser unit ~~is formed in accordance with~~ comprises an MOPA (master oscillator power amplifier) system ~~by using in which~~ the amplification stage ~~laser having no~~ does not include a laser resonator.

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3. (Currently Amended) The light source device according to claim 1, wherein said laser unit ~~is formed in accordance with~~ comprises an injection locking system (ILS) ~~by using in which~~ the amplification stage ~~laser having~~ includes a laser resonator.

4. (Currently Amended) The light source device according to claim 1, wherein each of said oscillation stage ~~laser~~ and said at least one amplification stage ~~laser~~ includes a YAG laser.

5. (Currently Amended) The light source device according to claim 2, wherein each of said oscillation stage ~~laser~~ and said at least one amplification stage ~~laser~~ includes a YAG laser.

6. (Currently Amended) The light source device according to claim 3, wherein each of said oscillation stage ~~laser~~ and said at least one amplification stage ~~laser~~ includes a YAG laser.

7. (Currently Amended) The light source device according to claim 4, wherein said oscillation stage ~~laser~~ includes a single mode YAG laser.

8. (Currently Amended) The light source device according to claim 4, wherein said at least one amplification stage ~~laser~~ includes a high-powered YAG laser.

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9. (Currently Amended) The light source device according to claim 5, wherein said at least one amplification stage ~~laser~~ includes a high-powered YAG laser.

10. (Currently Amended) The light source device according to claim 1, wherein each of said oscillation stage ~~laser~~ and said at least one amplification stage ~~laser~~ includes a carbon dioxide laser using as a laser medium a mixed gas including carbon dioxide gas.

11. (Currently Amended) The light source device according to claim 2, wherein each of said oscillation stage ~~laser~~ and said at least one amplification stage ~~laser~~ includes a carbon dioxide laser using as a laser medium a mixed gas including carbon dioxide gas.

12. (Currently Amended) The light source device according to claim 3, wherein each of said oscillation stage ~~laser~~ and said at least one amplification stage ~~laser~~ includes a carbon dioxide laser using as a laser medium a mixed gas including carbon dioxide gas.

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13. (Currently Amended) The light source device according to claim 10, wherein said oscillation stage ~~laser~~ includes a pulse carbon dioxide laser.

14. (Currently Amended) The light source device according to claim 10, wherein said at least one amplification stage ~~laser~~ includes a CW (continuous wave) carbon dioxide laser.

15. (Currently Amended) The light source device according to claim 11, wherein said at least one amplification stage ~~laser~~ includes a CW (continuous wave) carbon dioxide laser.

16. (Currently Amended) The light source device according to claim 10, wherein said at least one amplification stage ~~laser~~ includes a TEA (transversely exited atmospheric) carbon dioxide laser.

17. (Currently Amended) The light source device according to claim 11, wherein said at least one amplification stage ~~laser~~ includes a TEA (transversely exited atmospheric) carbon dioxide laser.

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18. (Currently Amended) Exposure equipment comprising:

a light source device for generating extreme ~~ultra-violet~~
ultraviolet light by irradiating a target with a laser beam, said
light source device ~~having~~ comprising: (i) a target supply unit
5 for supplying a material which becomes said target, (ii) a laser
unit, ~~including~~ which includes an oscillation stage including
a laser having for generating a laser beam in both a lower-order
transverse mode and a single mode and at least one amplification
stage ~~laser~~ for amplifying ~~a lower-order transverse mode~~
10 the laser beam generated by said oscillation stage ~~laser~~, for
irradiating said target with the amplified laser beam so as to
generate plasma, and (iii) a collection optical system for
collecting ~~the extreme ultra-violet~~ ultraviolet light emitted
from said plasma to output the collected extreme ~~ultra-violet~~
15 ultraviolet light;

an illumination optical system for collecting the extreme
~~ultra-violet~~ ultraviolet light generated by said light source
device onto a mask by using ~~plural~~ a plurality of mirrors; and

a projection optical system for exposing an object to light
20 by using the extreme ~~ultra-violet~~ ultraviolet light reflected
from said mask.

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19. (Currently Amended) The exposure equipment according to claim 18, wherein said laser unit of said light source device ~~is formed in accordance with~~ comprises an MOPA (master oscillator power amplifier) system ~~by using in which~~ the amplification stage ~~laser having no~~ does not have a laser resonator.

20. (Currently Amended) The exposure equipment according to claim 18, wherein said laser unit of said light source device ~~is formed in accordance with~~ comprises an injection locking system (ILS) ~~by using in which~~ the amplification stage ~~laser having~~ includes a laser resonator.